

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of the claims in the application.

Listing of the Claims:

1 1. (currently amended) A process for stabilizing
2 the pH of a pulp suspension at a desired pH level,
3 comprising increasing the ~~alkalinity~~ buffering ability of
4 said ~~paper-making~~ pulp suspension by adding thereto, in
5 the stock preparation of a paper machine in a paper mill,
6 a combination of an alkali metal hydroxide feed and a
7 carbon dioxide feed, which cooperate to increase the pH
8 of said pulp suspension and to otherwise only counter
9 each other's pH adjusting effects without further
10 separate uses of their respective intermediate pH
11 adjusting effects, each of said feeds being added in an
12 amount greater than what would be required to only adjust
13 the pH of the suspension to the desired pH level, said
14 feeds being provided in an amount sufficient to achieve a
15 significant buffering effect of said pulp suspension and
16 to increase the pH of said pulp suspension and maintain
17 the pH at a desired level from the addition of the feeds
18 throughout the short circulation and formation of the
19 paper on the paper machine.

20 2. (previously presented) Process according to
21 claim 1, characterized in that the pH of said pulp
22 suspension is increased to a pH between about 7 and 9.

1 3. (original) Process according to claim 1,
2 characterized in that said alkali metal hydroxide is
3 aqueous sodium hydroxide and said carbon dioxide is
4 gaseous carbon dioxide.

1 4. (original) Process according to claim 1,
2 characterized in that said alkali metal hydroxide is fed
3 to said pulp suspension prior to the feeding of said
4 carbon dioxide.

1 5. (currently amended) Process according to claim
2 1, characterized in that the ~~alkalinity~~ buffering ability
3 of said pulp suspension is increased by providing a
4 substantially equal molar amount of alkali metal
5 hydroxide and dissolved carbon dioxide, said amount being
6 sufficient to provide a significant buffering effect at
7 about pH 8.

1 6. (original) Process according to claim 1,
2 characterized in that said pulp suspension is chemical or
3 mechanical pulp.

1 7. (currently amended) Process according to claim
2 6, characterized in that said pulp suspension ~~a~~ is a
3 bleached chemical pulp.

1 8. (previously presented) Process according to
2 claim 1, characterized in that said pulp suspension
3 contains calcium carbonate filler.

1 9. (original) Process according to claim 1,
2 characterized in that said alkali metal hydroxide and
3 carbon dioxide feeds are added to said pulp suspension
4 flowing in a pipe leading to a stock preparation tank.

1 10. (original) Process according to claim 1,
2 characterized in that said alkali metal hydroxide and
3 said carbon dioxide are combined prior to feeding to the
4 pulp suspension.

1 11. (currently amended) A process for producing
2 paper comprising:
3 providing a paper making pulp suspension for
4 processing in the stock preparation of a paper machine in
5 a paper mill;
6 increasing the ~~alkalinity~~ buffering ability of said
7 pulp suspension by adding thereto in said stock
8 preparation a combination of an alkali metal hydroxide
9 feed and a carbon dioxide feed, which feeds cooperate to
10 increase the pH of said pulp suspension and to otherwise

11 only counter each other's pH adjusting effects without
12 further separate uses of their respective intermediate pH
13 adjusting effects,

14 each of said feeds being provided in an amount
15 greater than that required to only adjust the pH of the
16 pulp suspension to a desired level, and said feeds being
17 provided in an amount sufficient to achieve a substantial
18 buffering effect of said pulp suspension and to increase
19 the pH of said pulp suspension and maintain the pH at a
20 desired level from the addition of the feeds throughout
21 the short circulation and the formation of the pulp
22 suspension into a web; and

23 forming said pulp suspension into a web, and drying
24 said web to form paper.

1 12. (previously presented) Process according to
2 claim 11, characterized in that the pH of said pulp
3 suspension is increased to a desired value between 7 and
4 9.

1 13. (currently amended) Process according to claim
2 1, further comprising ~~A process for stabilizing the pH~~
3 ~~of a pulp suspension at a desired pH level, comprising~~
4 ~~the steps of:~~
5 ~~— (a) the step of providing a paper making said pulp~~
6 ~~suspension having an initial pH for processing in the~~
7 ~~stock preparation of a said paper machine in a said paper~~

8 mill, said pulp suspension being provided with an initial
9 pH level being lower than said desired pH level.

10 ~~—— (b) adding to said pulp suspension a combination of~~
11 ~~a carbon dioxide feed and an alkali metal hydroxide feed,~~
12 ~~which feeds cooperate without separate uses of their~~
13 ~~respective intermediate pH adjusting effects, said feeds~~
14 ~~being added in amounts which exceed those required to~~
15 ~~only increase the pH to the desired level and which feeds~~
16 ~~cooperate concurrently to.~~

17 ~~———— i) substantially counter each other's pH~~
18 ~~changing effect, and~~

19 ~~———— ii) achieve a significant buffering of said~~
20 ~~pulp suspension, and~~

21 ~~—— (c) adding to said pulp suspension an excess amount~~
22 ~~of said alkali metal feed to increase the pH of said pulp~~
23 ~~suspension to a pH higher than said initial pH,~~
24 ~~whereby said pH of said pulp suspension is stabilized~~
25 ~~throughout the short circulation and the formation of~~
26 ~~said pulp suspension into a web.~~

1 14. (currently amended) Process according to claim
2 13, wherein the step of providing said ~~paper making~~ pulp
3 suspension includes adding water to bales of pulp or
4 adding water to pulp of increased consistency coming from
5 a pulp mill.

1 15. (currently amended) Process according to claim
2 13, wherein said amount of alkali metal hydroxide feed

3 which achieves a significant buffering effect is a sodium
4 hydroxide feed equal to between 0.5 and 5 kg/ton dry
5 cellulose and said amount of carbon dioxide feed which
6 ~~achieve~~ achieves a significant buffering effect is are,
7 ~~respectively,~~ equal to between 0.5 and 5 kg/ton dry
8 cellulose.

1 16. (currently amended) A process for stabilizing
2 the pH of a pulp suspension at a desired pH level,
3 comprising providing a papermaking pulp suspension and
4 increasing the ~~alkalinity~~ buffering ability of said paper
5 making pulp suspension by adding to the circulation
6 system of pulp and white water in the stock preparation
7 of a paper machine in a paper mill, a combination of an
8 alkali metal hydroxide feed and a carbon dioxide feed,
9 which feeds cooperate to increase the pH of said pulp
10 suspension and to otherwise only counter each other's pH
11 adjusting effects without further separate uses of their
12 respective intermediate pH adjusting effects, each of
13 said feeds being added in an amount greater than what
14 would be required to only adjust the pH of the suspension
15 to the desired pH level, said feeds being provided in an
16 amount sufficient to achieve a significant buffering
17 effect of said pulp suspension and to increase the pH of
18 said pulp suspension and maintain the pH at a desired
19 level from the addition of the feeds throughout the short
20 circulation and formation of the paper on the paper
21 machine.

1 17. (previously presented) Process according to
2 claim 16, wherein the step of providing said paper making
3 pulp suspension includes adding water to bales of pulp or
4 adding water to pulp of increased consistency coming from
5 a pulp mill.

1 18. (previously presented) Process according to
2 claim 16, wherein said amount of alkali metal hydroxide
3 feed, which achieves a significant buffering, is a sodium
4 hydroxide feed of from about 0.5 kg/ton to about 5 kg/ton
5 of dry cellulose and said amount of carbon dioxide feed,
6 which achieves a significant buffering, is equal to from
7 about 0.5 kg/ton to about 5 kg/ton of dry cellulose.

1 19. (currently amended) A process for producing
2 paper comprising:

3 (a) adding water to bales of pulp or to pulp of
4 increased consistency from a pulp mill to provide a paper
5 making pulp suspension for processing in the stock
6 preparation of a paper machine in a paper mill including
7 short circulation and formation of the pulp suspension
8 into a web;

9 (b) increasing the ~~alkalinity~~ buffering ability of
10 said pulp suspension in said stock preparation by adding
11 thereto a combination of an alkali metal hydroxide feed
12 and a carbon dioxide feed, which feeds cooperate to
13 increase the pH of said pulp suspension and to otherwise

14 only counter each other's pH adjusting effects without
15 further separate uses of their respective intermediate pH
16 adjusting effects ~~and substantially counter each others~~
17 ~~pH adjusting effect~~, said feeds being provided in an
18 amount greater than that required to only adjust the pH
19 of the pulp suspension to a desired level, and said feeds
20 being provided in an amount sufficient to achieve a
21 substantial buffering effect of said pulp suspension and
22 to increase the pH of said pulp suspension,
23 ~~—— (c) adding an excess amount of said hydroxide to~~
24 ~~increase the pH of said pulp suspension and maintain the~~
25 ~~pH at a desired level from the addition of the feeds~~
26 ~~throughout the short circulation and the formation of the~~
27 ~~pulp suspension into a web, and~~
28 ~~(d)~~ (c) forming said pulp suspension into a web, and
29 drying said web to form paper.

1 20. (previously presented) Process according to
2 claim 19, wherein the amount of said alkali metal
3 hydroxide feed sufficient to achieve a substantial
4 buffering effect is a sodium hydroxide feed of from about
5 0.5 kg/ton to about 5 kg/ton of dry cellulose and the
6 amount of said carbon dioxide feed sufficient to achieve
7 a substantial buffering effect is from about 0.5 kg/ton
8 to about 5 kg/ton of dry cellulose.

1 21. (previously presented) Process according to
2 claim 1, wherein said paper making pulp suspension is

3 provided by adding water to bales of pulp or adding water
4 to pulp of increased consistency coming from a pulp mill.

1 22. (previously presented) Process according to
2 claim 1, wherein said amount of said alkali metal
3 hydroxide feed, which is sufficient to achieve a
4 substantial buffering effect, is a sodium hydroxide feed
5 of from about 0.5 kg/ton to about 5 kg/ton of dry
6 cellulose and said amount of said carbon dioxide feed,
7 which is sufficient to achieve a substantial buffering
8 effect, is from about 0.5 kg/ton to about 5 kg/ton of dry
9 cellulose.

1 23. (previously presented) Process according to
2 claim 11, wherein the step of providing said paper making
3 pulp suspension includes adding water to bales of pulp or
4 adding water to pulp of increased consistency coming from
5 a pulp mill.

1 24. (previously presented) Process according to
2 claim 11, wherein said amount of said alkali metal
3 hydroxide feed, which is sufficient to achieve a
4 substantial buffering effect, is a sodium hydroxide feed
5 of from about 0.5 kg/ton to about 5 kg/ton of dry
6 cellulose and said amount of said carbon dioxide feed,
7 which is sufficient to achieve a substantial buffering
8 effect, is from about 0.5 kg/ton to about 5 kg/ton of dry
9 cellulose.

1 25. (currently amended) A process for stabilizing
2 the pH of a pulp suspension at a desired pH level,
3 comprising providing a papermaking pulp suspension in a
4 paper mill after a pulp mill and increasing the
5 ~~alkalinity~~ buffering ability of said pulp suspension by
6 adding thereto, in the stock preparation of a paper
7 machine in said paper mill, a combination of an alkali
8 metal hydroxide feed and a carbon dioxide feed, which
9 feeds cooperate to increase the pH of said pulp
10 suspension and to otherwise only counter each other's pH
11 adjusting effects without further separate uses of their
12 respective intermediate pH adjusting effects, each of
13 said feeds being added in an amount greater than what
14 would be required to only adjust the pH of the suspension
15 to the desired pH level, said feeds being provided in an
16 amount sufficient to achieve a significant buffering
17 effect of said pulp suspension and to increase the pH of
18 said pulp suspension and maintain the pH at a desired
19 level from the addition of the feeds throughout the short
20 circulation and formation of the paper on the paper
21 machine.

1 26. (previously presented) A process according to
2 claim 25, wherein said feeds are added to the circulation
3 of pulp and white water of said paper machine.